

In re: Appln No. 10/642,560
Amendment dated December 5, 2006
Reply to Office action of October 12, 2006

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (canceled)
2. (canceled)
3. (canceled)
4. (canceled)
5. (canceled)
6. (canceled)
7. (canceled)
8. (canceled)
9. (currently amended) ~~The enhanced nanocomposite according to claim 7, An~~
enhanced nanocomposite comprising a powder having a surface modified nanoscale layer selected from the group consisting of metals, metal oxides, organometallics, semiconductors, alloys, carbon products, or combinations thereof, the powder having an average particle size from about 1 nanometer to 100 nanometers, a nanoscale layer having an average thickness from 1 nanometer to 100 nanometers; and a nanocomposite conductive medium having an average particle size from 1 nanometer to 100 nanometers selected from the group consisting of monomers, polymers, organometallics, and combinations thereof, wherein the enhanced nanocomposite is assembled into a matrix comprised of at least one series of an alternating layer of nanocomposite doped with conductive additives with a layer of nanocomposite doped with semiconductor additives and wherein the thickness of a layer of nanocomposite doped with conductive additives is less than 10 nanometers and the thickness of a layer of nanocomposite doped with semiconductor additives is less than 10 nanometers.
10. (canceled)

In re: Applu No. 10/642,560
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11. (canceled)
12. (canceled)
13. (canceled)
14. (canceled)
15. (currently amended) The enhanced nanocomposite according to claim 9 ~~claim 4~~, wherein the carbon products, monomers, polymers, organometallics, metals, metal oxides, and semiconductors are chemically modified by non-thermal means.
16. (previously presented) The enhanced nanocomposite according to claim 15, wherein the non-thermal means is selected from the group consisting of microwave or electron beam.
17. (previously presented) The enhanced nanocomposite according to claim 15, wherein the non-thermal means is subjected to a phonon or electron bias as induced by externally generated fields.
18. (previously presented) The enhanced nanocomposite according to claim 17, wherein the externally generated fields is selected from the group consisting of ultrasonic, acoustic phonon, magnetic, electromagnetic, or electrical fields.
19. (currently amended) The enhanced nanocomposite according to claim 9 ~~claim 4~~, wherein the enhanced nanocomposite is utilized within energy conversion products including products selected from the group consisting of thermionics, thermoelectric, photovoltaic, fuel cell, piezoelectrics, photoelectrics, ballistic tunneling, thermal diodes, and photon, electron, or phonon emitters.
20. (previously presented) The enhanced nanocomposite according to claim 19, wherein the enhanced nanocomposite is further subjected to a phonon or electron bias as induced by externally generated fields.

In re: Appln No. 10/642,560
Amendment dated December 5, 2006
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21. (previously presented) The enhanced nanocomposite according to claim 20, wherein the externally generated field is selected from the group consisting of ultrasonic, acoustic phonon, magnetic, electromagnetic, or electrical fields.
22. (previously presented) The enhanced nanocomposite according to claim 21, wherein the application of externally generated fields produces byproducts including byproducts selected from the group consisting of conductive polymers, nanotubes, nanohorns, fullerenes, or combinations thereof.
23. (canceled)
24. (canceled)
25. (canceled)
26. (canceled)
27. (currently amended) An enhanced nanocomposite assembled into matrix comprised of at least one series of an alternating layer of nanocomposite doped with conductive additives with a layer of nanocomposite doped with semiconductor additives comprised of a powder having a surface modified nanoscale layer selected from the group consisting of metals, metal oxides, organometallics, semiconductors, alloys, carbon products, or combinations thereof, the powder having an average particle size of from about 1 nanometer to about 1 micron, a nanoscale layer having an average thickness from 1 nanometer to 100 nanometers; and a nanocomposite conductive medium having an average particle size from 1 to 100 ~~The enhanced nanocomposite assembled into matrix according to claim 25,~~ wherein the thickness of a layer of nanocomposite doped with conductive additives is less than 10 nanometers and the thickness of a layer of nanocomposite doped with semiconductor additives is less than 10 nanometers.
28. (currently amended) The enhanced nanocomposite assembled into matrix according to ~~claim 27~~ claim 24, wherein the nanocomposite is subjected to a phonon or electron bias as induced by externally generated fields.

In re: Appln No. 10/642,560
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29. (currently amended) The enhanced nanocomposite assembled into matrix according to claim 27 ~~claim 24~~, wherein the nanocomposite is subjected to a phonon or electron bias as induced by externally generated fields.
30. (new) The enhanced nanocomposite according to claim 9, wherein the multiple layer nanocomposite is subjected to a phonon or electron bias as induced by externally generated fields.
31. (new) The enhanced nanocomposite according to claim 9, wherein at least one externally generated field is selected from the group consisting of ultrasonic, acoustic phonon, magnetic, electromagnetic, and electrical fields.